

Original Research Article**Extent of adoption of improved animal husbandry practices by dairy farmers of Morar block in Gwalior district****Abstract**

The present study was conducted to assess the extent of adoption of improved animal husbandry practices by dairy farmers of Morar Block in Gwalior district of Madhya Pradesh. Simple random sampling method was used to select 120 dairy farmers as respondents. The findings revealed that reproductive practices like artificial insemination at proper time of heat, with semen of good bull was regularly adopted by majority (80.00%) of the dairy farmers, regarding nutritional practices provision of ad lib clean and fresh water was regularly adopted by 85.00 per cent of dairy farmers, thirdly, washing of hands and udder before milking was the major (96.67%^[D1]) management practices regularly adopted by farmers. To control disease prompt reporting of outbreak of a contagious disease to the local veterinarian was adopted by 76.67 per cent of the dairy farmers. Lastly, marketing practice like purchasing of animals from reliable sources after following scientific method of scoring/weightage on production was adopted by (41.67 per cent)^[D2] of the dairy farmer. The final study reveals that majority (58.33 per cent) of the respondents had medium level of adoption of improved animal husbandry practices.

Keywords: Adoption, animal husbandry, dairy farmers, practices

INTRODUCTION

The recent advances in animal husbandry have demonstrated potential for maximization of milk productivity. Today, the new developments and techniques have taken over the old ones. However, reality is also that expected number of the farmer still does not fully adopt animal husbandry related innovations. India with a production of 155.5 million tonnes of milk in 2015-16 is the leading country in the world in terms of total milk production contributing about 18.50 % of the world's milk production. The demand of milk and milk products in India is projected to increase to 142.9 million tonnes in 2015 and further to 191.3 million in 2020.(Press Information Bureau, Govt of India 2016)

Animal husbandry services in our country rendered by number of Government and non-government organizations through their extension workers at national, state, district, block and village levels through various livestock development programmes and projects which help dairy farmers to adopt the animal husbandry practices. In rural areas of Gwalior district, the agricultural production and animal husbandry are mainly in the hands of the farming community, who maintain one or two milch^[D3] animals under two-tier production system and maintain them on the by-products of the agricultural produces. Due to limited resources available with the farming community, expected improvement is yet to achieve by them in the milk production per animal. The availability of latest scientific knowledge and information has not yet help achieve an expected level of adoption of improved animal husbandry practices. Keeping this in mind the study was conducted with the objective to

study the “Extent of adoption of improved animal husbandry practices by dairy farmers” of Morar block in Gwalior district[D4].

METHODOLOGY[D5]

The study was conducted in Morar Block of Gwalior district in the state of Madhya Pradesh, India due to maximum dairy farmers in the block. The selected block comprises of 176 villages. A list of villages where animal husbandry practices are being operated by the farmers was prepared with help of extension officials. Out of which, 10 villages were selected randomly by using the sampling method for the study. A total of 120 dairy farmers as respondents were selected by simple random sampling[D6]. The extent of adoption of major animal husbandry practices was measured in terms of reproductive, nutritional, management, disease control and marketing practices. For the collection of data an interview schedule was developed. The respondents were asked to give opinion about the use of improved animal husbandry practices (adoption) on three point continuum viz; regular adoption, sometime adoption and no adoption and scores 2, 1 and 0 were assigned, respectively. Extent of adoption was calculated on the basis of these scores. The adoption score obtained by individual respondent was converted into adoption index as below:

$$\text{Adoption Index} = \frac{\text{Sum of the adoption scores obtained by respondent}}{\text{Sum of obtainable adoption score}} \times 100$$

The categorization was based on the mean. The following categories were used in the study.

Category
Low(<Mean – SD)
Medium (Mean ± SD)
High(>Mean + SD)

RESULTS AND DISCUSSION

Profile of dairy farmers

Age: The data presented in Table 1 reveals that majority (55.83 per cent) of the respondents were found in the middle age group followed by young age group (27.50 per cent) and old age group (16.67 per cent). Almost similar findings were also reported by Patel (1994).

Table 1 Distribution of respondents according to their age (N=120)

Sl.No.	Categories	Frequency	Percentage
1.	Young	33	27.50
2.	Middle	67	55.83
3.	Old	20	16.67

Education-The data displayed in Table 2 indicate that most of the respondents (37.50%) were educated up to middle school level, followed by primary educated (33.33%) and 11.67 per cent reported to have passed high school. It was also observed that highly educated and illiterate respondents were very low i.e. only 09.17 percent and 8.33 percent, respectively.

Table 2 Distribution of respondents according to their education level (N=120)

Sl. No.	Categories	Frequency	Percentage
1.	Illiterate	10	08.33
2.	Primary school	40	33.33
3.	Middle school	45	37.50
4.	High School	14	11.67
5.	Above high school	11	09.17

Extent of adoption of improved animal husbandry practices

Reproduction practices:

Table 3 reveals that reproduction practices like artificial insemination in milch animals at proper time of heat with semen of good bull, diagnosis of pregnancy of milch animal between 60 and 90 days after service and proper treatment to the animals through veterinarian for repeat breeders, metritis, endometritis and anoestrus were adopted continuously by 80.00, 67.50 and 73.33 per cent of the dairy farmers, respectively. Present research finding point toward that majority (80.00 per cent) of the dairy farmers had adopted artificial insemination in their milch animals. This finding is in line with Ingoleet *al.* (1988), Yadav and Yadav (1994) and Gour (2002).

Table 3 Distribution of the dairy farmers according to extent of adoption regarding reproduction practices (N=120)

Sl.No.	Practices	RA	SA	NA	Total
1	Artificial Insemination done at proper time of heat, with semen of good bull	96 (80.00)	11 (09.17)	13 (10.83)	120 (100.00)
2	Having the crossbred cow served within 60 to 90 days after calving and for indigenous cow/buffalo – 90 to 100 days after calving	0 (0.00)	0 (0.00)	120 (100.00)	120 (100.00)
3	Having pregnancy diagnosis done between 60 to 90 days after service	81 (67.50)	15 (12.50)	24 (20.00)	120 (100.00)
4	Treatment of repeat breeders, metritis, endometritis and anoestrus cases by a veterinarian	88 (73.33)	13 (10.83)	19 (15.83)	120 (100.00)

Figures in parenthesis indicate percentage

RA-Regular adoption SA- Sometime adoption NA- No adoption

Nutritional practices:

The findings in Table 4 reveals that in case of nutritional practices like feeding of colostrums to newborn calves within half an hour of birth, feeding of chopped fodders and balanced concentrate mixture with supplementation of mineral mixture on the basis of milk

- 92 production, ad libitum clean and fresh water to animals and high yielding varieties
(HYV) of fodder
- 93 seeds were adopted continuously by 78.33, 68.33, 85.00 and 51.67 per cent of the dairy
- 94 farmers, respectively. This finding is in line with Yadav and Yadav (1995) and Patel (1998)

95 **Table 4 Distribution of the dairy farmers according to extent of adoption regarding**
96 **nutritional practices (N=120)**

Sl. No.	Practices	RA	SA	NA	Total
1	Feeding of colostrums to newborn calves within half an hour of birth	94 (78.33)	11 (09.17)	15 (12.50)	120 (100.00)
2	Feeding of chopped fodders and balanced concentrate mixture with supplementation of min. mixture on the basis of milk production	82 (68.33)	20 (16.67)	18 (15.00)	120 (100.00)
3	Provision of ad lib clean and fresh water to animals	102 (85.00)	12 (10.00)	06 (05.00)	120 (100.00)
4	Use of HYVs of fodder seeds	62 (51.67)	22 (18.33)	36 (30.00)	120 (100.00)

Figures in parenthesis indicate percentage

97 *Management practices:*

98 The Table 5 reveals that continuous adoption was observed in majority of the dairy
99 farmers. Management practices like washing of hands and udder before milking, maintenance
100 of cleanliness, comfort and ventilation in animal houses or sheds, use of sterilized
101 scissors/knife for cutting of naval cord and application of tincture iodine on the naval cord
102 and full hand method of milking were adopted continuously by 96.67, 90.83, 62.50 and 81.67
103 per cent of dairy farmers. The higher level of adoption of milking practice (67.85 per cent)
104 reported by Yadav and Yadav (1994), while 51.00 per cent for milking, 57.00 per cent for
105 housing and 60.00 per cent for management, as observed by Patel (1998).

106 **Table 5 Distribution of the dairy farmers according to extent of adoption regarding**
107 **management practices (N=120)**

Sl. No.	Practices	RA	SA	NA	Total
1	Washing of hands and udder before milking	114 (96.67)	3 (02.50)	1 (00.83)	120 (100.00)
2	Maintenance of cleanliness during milking and comfort in animal houses/sheds (cleaning of manger and removal of dung daily) and good ventilation	109 (90.83)	4 (03.33)	7 (05.83)	120 (100.00)
3	Use of sterilized scissors/knife for cutting naval cord and application of tincture iodine on the naval cord/painting of naval cord	75 (62.50)	25 (20.83)	20 (16.67)	120 (100.00)
4	Full hand method of milking	98 (81.67)	13 (10.83)	09 (07.50)	120 (100.00)

Figures in parenthesis indicate percentage

108 *Disease control practices:*

109 From the data presented in Table 6 it reveals that disease control practices viz. timely
110 and regular vaccination against common contagious diseases such as FMD and HS/BQ,

prompt reporting of outbreak of contagious disease to the local veterinarian and timely treatment of sick animals by veterinary doctor were adopted continuously by 75.00, 76.67 and 74.17 per cent of the dairy farmer. At the same time it is also striking to note that important disease control practice like keeping sick animals in isolation from the healthy animals was not at all adopted by majority (55.00 per cent) of the dairy farmers. The present finding is supported by Yadav and Yadav (1995^[D11]) and Gour (2002).

Table 6 Distribution of the dairy farmers according to extent of adoption regarding disease control practices (N=120)

Sl. No.	Practices	RA	SA	NA	Total
1	Timely and regular vaccination against common contagious diseases, such as FMD and HS/BQ	90 (75.00)	16 (13.33)	14 (11.67)	120 (100.00)
2	Prompt reporting of outbreak of a contagious disease to the local veterinarian	92 (76.67)	18 (15.00)	10 (08.33)	120 (100.00)
3	Timely treatment of sick animals by veterinary doctor	89 (74.17)	19 (15.33)	12 (10.00)	120 (100.00)
4	Isolation of sick animals from the healthy ones in a separate house/shed/ place	54 (45.00)	0 (0.00)	66 (55.00)	200 (100.00)

Figures in parenthesis indicate percentage

Marketing practices:

Marketing practices are also as important, as other practices of A.H. But some of the marketing practice like purchasing of animals from reliable sources after following scientific method of scoring/weightage on production was adopted by (41.67 per cent) of the dairy farmer as revealed in Table 7. While, nearly half (48.33 per cent) of them were not adopted proper purchasing procedure of animals after veterinary check-up. Other important practices viz. obtaining loans from nationalised banks instead of private money lender to purchase inputs for dairy farming was continuously adopted by (63.34 per cent) of the dairy farmers and half (50.00 per cent) of them were continuously adopting systematic procedure of selling of animals with necessary records of milk production, parity, service period and vaccination. This finding is in conformity with this result of Gour (2002).

Table 7 Distribution of the dairy farmers according to extent of adoption regarding marketing practices (N=120)

Sl. No.	Practices	RA	SA	NA	Total
1	Purchasing animals from reliable source, after done scoring / weightage on production	50 (41.67)	24 (20.00)	46 (38.33)	120 (100.00)
2	Purchasing animals after veterinary check up	42 (35.00)	20 (16.67)	58 (48.33)	120 (100.00)
3	Obtaining loans from nationalized banks instead of village money lender	76 (63.34)	10 (08.33)	34 (28.33)	120 (100.00)
4	Sale of animals with necessary record of milk production, parity, service period and vaccination etc.	60 (50.00)	11 (09.17)	49 (40.83)	120 (100.00)

Figures in parenthesis indicate percentage

Level of overall adoption regarding improved animal husbandry practices-

Table 8 shows that majority (58.33 per cent) of the respondents had medium level of adoption of improved animal husbandry practices while, 26.67 per cent percentage of respondents were found to have high level of adoption of improved animal husbandry practices and only 15.00 per cent percentage of respondents were found to have low level of adoption of improved animal husbandry. The finding is in agreement with findings of Raksheet.al. (1998), Gour (2002) and Patel (2000)

Table 8 Distribution of the dairy farmers according to their overall adoption regarding improved animal husbandry practices (N=120)

Sl. No.	Categories	Frequency	Percentage
1.	Low (< 3.63 score)	18	15.00
2.	Medium (between 3.63 to 6.21 score)	70	58.33
3.	High (> 6.21 score)	32	26.67
Mean ($\bar{x}$) = 4.92		SD = 1.29	

CONCLUSION

From the study it can be concluded that slightly more than half (58.33 per cent) of the milk producer had medium level of adoption of improved animal husbandry practices. The probable reasons for above finding might be due to the economic condition and staffing of positivism in terms of change agency contact, scientific orientation, risk orientation, knowledge and ICT exposure up to desired level.

Based on the findings and observations, the following recommendations are made for better adoption of improved animal husbandry practices by the farmers:

- i. Motivational tour programmes, demonstrations as well as by providing on campus institutional training programmes on improve animal husbandry practices to dairy farmers motivate them to adopt improved animal husbandry practices.
- ii. ICT exposure or awareness on use of various ICT tools for easy asses to good quality animal husbandry practices for rearing of dairy animals.

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